

PTO 09-1506

CC=JP
DATE=19880127
KIND=A
PN=63019532

OBSERVATION PLATE
[KANSATSU YO PLATE]

YUICHI CHIKAKIYO, ET AL.

UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. DECEMBER 2008
TRANSLATED BY: SCHREIBER TRANSLATION, INC.

PUBLICATION COUNTRY	(10):	JP
DOCUMENT NUMBER	(11):	63019532
DOCUMENT KIND	(12):	A
PUBLICATION DATE	(43):	19880127
APPLICATION NUMBER	(21):	61-164221
APPLICATION DATE	(22):	19860711
INTERNATIONAL CLASSIFICATION	(51):	G01N 1/28; B01L 3/00; G01N 33/48
PRIORITY COUNTRY	(33):	N/A
PRIORITY NUMBER	(31):	N/A
PRIORITY DATE	(32):	N/A
INVENTOR(S)	(72):	YUICHI CHIKAKIYO; MASUYO SHINODA; AND TSUTOMU SAKAGAMI
APPLICANT(S)	(71):	SEKISUI CHEMICAL CO., LTD.
DESIGNATED CONTRACTING STATES	(81):	N/A
TITLE	(54):	OBSERVATION PLATE
FOREIGN TITLE	[54A]:	KANSATSU YO PLATE

Specification

1. Title of the Invention

Observation Plate

2. Claims

1. An observation plate, comprising:

a slide glass;

a frame of a specified thickness, which is liquid-tightly adhered on an upper surface of said slide glass and forms a plurality of specimen tanks by splitting said upper surface into a plurality of regions; and

a cover glass, which is disposed on an upper surface of said frame so as to form two openings in each specimen tank formed on said frame and is liquid-tightly adhered to said frame,

wherein the thickness of said frame is set within the range of causing a capillary phenomenon between said slide glass and said cover glass.

2. The observation plate according to Claim 1, wherein said frame is made of an adhesive to adhere said slide glass and said cover glass.

3. The observation plate according to Claim 1, wherein the thickness of said frame is not greater than 1,000 μm .

4. The observation plate according to Claim 3, wherein the thickness of said frame is constant.

5. The observation plate according to Claim 3, wherein the thickness of said frame successively changes in a specified direction.

6. The observation plate according to Claim 1, wherein a ruling line is formed on said slide glass or said cover glass.

7. The observation plate according to Claim 1, wherein a dying agent is applied and dried on said cover glass.

3. Detailed Description of the Invention

[Applicable Industrial Field]

The present invention relates to an observation plate used in microscope observation for clinical tests such as urinalysis and blood test or for experiment and research purposes.

(Prior Art)

A plate used in microscope observation is conventionally used by covering and securing a specimen to observe on a slide glass. For example, in a clinical test such as urinalysis, a specimen is put dropwise on a slide glass, secured thereon by directly covering with a cover glass, and provided for microscope observation.

If microscope observation is performed in this way, when a plurality of specimens is placed dropwise on a slide glass, there is a concern of contamination among the specimens. For this reason, only one specimen can be observed with one slide glass. For observation of many specimens, a specimen has to be secured using many slide glasses, and it is very troublesome. In addition, a cover glass to cover a specimen on the slide glass is very thin, which is as thin as 0.1 to 0.2 mm, and there is a concern of damaging a cover glass upon covering a specimen with the cover glass.

(Problems to be Solved by the Invention)

The present invention is to solve the above problems in a conventional technique and an object of the invention is to provide an observation plate that can secure many specimens on one slide glass. Another object of the invention is to provide an observation plate that can easily secure a specimen on a slide glass.

(Means to Solve the Problems)

An observation plate of the invention includes a slide glass; a frame of a specified thickness, which is liquid-tightly adhered on an upper surface of the slide glass and forms a plurality of specimen tanks by splitting the upper surface into a plurality of regions; and a cover glass,

which is disposed on an upper surface of the frame so as to form two openings in each specimen tank formed on the frame and is liquid-tightly adhered to said frame. The thickness of the frame is set within the range for causing a capillary phenomenon between the slide glass and the cover glass. With this configuration, the above object can be achieved.

(Embodiments)

Hereunder, the present invention will be described with embodiments.

An observation plate of the invention includes a slide glass [10], a cover glass [20], and a frame [30] that joins the slide glass [10] and the cover glass [20] being interposed therebetween, as shown in Figs. 1 and 2.

Similarly to a conventional slide glass, the slide glass [10] has a laterally long rectangular shape, and for example, an upper face [11] of one edge in the longitudinal direction is etched.

A frame [30] is disposed on an upper face of the slide glass [10]. The frame [30] has a specified thickness and is liquid-tightly adhered onto the upper face of the slide glass [10]. The frame [30], for example, has a frame-like shape in which the laterally long region on the upper face is generally equally divided into five, and five liquid-

tight specimen tanks [31], [31], ... are formed on the upper face of the slide glass [10]. In this embodiment, a normal temperature-curing adhesive is used as the frame [30].

On the upper face of the frame [30], a cover glass [20] is disposed. The cover glass [20] has a length that is substantially the same as the length in the longitudinal direction and liquid-tightly adhered onto the upper face of the frame [30]. The length of the cover glass [20] in the width direction (a direction perpendicularly across the longitudinal direction) is shorter than the length in the width direction of the frame [30], and the cover glass [20] is disposed being closer to one side in the width direction being away from the center part of the frame [30]. As a result, at each side in the width direction of the cover glass [20], each specimen tank [31], [31], ... has two openings [32], [32], ... and [33], [33], ..., which are opened upward. Each of openings [32], [32], ... is wider than the other openings [33], [33],

The frame [30] can be any as long as it keeps two facing surfaces of the slide glass [10] and the cover glass [20] at specified distance and liquid-tightly adheres them. While a normal temperature-curing type adhesive is used in this embodiment, a different adhesive, synthetic resin, or the like may be also used.

The thickness of the frame [30] is set not larger than 1,000 μm , such that the specimen tank [31] formed by the space between the slide glass [10] and the cover glass [20] can cause a capillary phenomenon. The thickness of the frame [30] may be constant, but the thickness can be successively varied so as to have larger thickness on one opening [32] side of the specimen tank [31] and have smaller thickness on the other opening [33] side.

The observation plate composed in this way may be used as follows. First, a specimen to observe is injected to an opening [31] of larger opening area by placing dropwise or the like. The inside of the specimen tank [31] is set to cause a capillary phenomenon and the specimen tank [31] has an opening [32] to place a specimen dropwise and an opening [33] that is different from the opening [32]. Accordingly, the specimen placed dropwise in the opening [32] is immediately expanded in the specimen tank [31] by a capillary phenomenon, and at this time, air in the specimen tank [31] is discharged from the other opening [33], and the specimen into the specimen tank [31] is expanded without a problem.

/3

As necessary, a specimen is placed dropwise in another specimen tank [31].

As described above, the observation plate, on which a specimen is placed dropwise and expanded in each specimen tank [31] is placed on a stage of a microscope and observed.

The observation plate of the invention may be used not only for clinical tests but also for microscopic observation for research and experimental purposes. In addition to microscopic observation, it can be also used for visual observation. Parallel or lattice-like ruling line(s), which can be used as a measure of standard dimension, may be provided on the slide glass [10] or the cover glass [20]. With the ruling line(s), an amount of component contained per unit volume in a specimen can be calculated. Furthermore, if a dying agent is applied and dried on an inner face of the cover glass [20] in advance, the specimen may be dyed upon injection of the specimen into the specimen tank [31] and thereby the specimen can be easily observed. Moreover, it is also possible to put a series of numbers or codes on the respective specimen tanks of one slide glass.

[Effects of the Invention]

As described above, in an observation plate of the invention, since a cover glass is adhered in advance onto a slide glass having specified space that can cause a

capillary phenomenon, a specimen can be secured therein by placing dropwise into the opening [32], which can be extremely easily done. In addition, since a plurality of specimens can be secured on one slide glass, specimens can be efficiently observed and the observation is economical since it is not necessary to use many slide glasses. Furthermore, the observation plate of the invention can be used not only for microscopic observation but also for visual observation, and therefore it can be used for wide purposes including clinical tests and observations for experiments and researches.

4. Brief Description of the Drawings

Fig. 1 is a perspective view of an example of an observation plate according to this invention; and Fig. 2 is a sectional view taken along line II-II of Fig. 1.

10: slide glass	20: cover glass
30: frame	31: specimen tank
32, 33: opening	

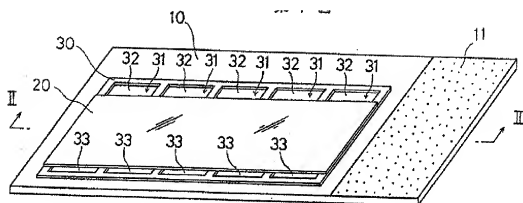


Fig. 1

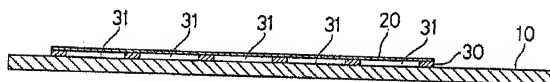


Fig. 2